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AUTHOR Guttmann, Joseph
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ABSTRACT

The main purpose of this study was to determine whether partially imposed imagery can be faciliatative in children's oral prose learning at an age where fully induced imagery is not. The results of this experiment are somewhat consistent with this speculation. While kindergarten subjects benefited only with fully imposed imagery, second grade subjects' performance under a partially imposed imagery strategy fell somewhere between that under fully imposed and fully induced strategies. Finally, by third grade subjects benefited even from a fully induced imagery strategy. The results are discussed in terms of the theoretical and practical implications for visual imagery development. (Author)

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The Effects of Pictures and Partial Pictures on Children's Oral Prose Learning[1]

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JOSEPH GUTTMANN

The Chicago-Read Mental Health Center

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The Effects of Pictures and Partial Pictures on Children's Oral Prose Learning[1]

JOSEPH GUTTMANN
The Chicago-Read Mental Health Center

Joseph Guttmann
The Chicago-Read Mental Health Center
6500 W. Irving Park Road
Chicago, Illinois 60634

Since Levin's (1972) conceptual distinction between imposed (experimenter-provided) and induced (subject generated) imagery strategies some investigators have made a point to capitalize on this distinction in their research studies. This differentiation between imposed and induced imagery strategies has proved to be not only conceptually sound but also functionally significant, especially insofar as the development of visual imagery in children is concerned. In paired-associate learning, for example, Wolff and Levin (1972) compared kindergarten children with third-grade children. While kindergartners could benefit from a fully imposed imagery strategy (visible interactions), a fully induced imagery strategy (simple imagery instructions) was unsuccessful. In contrast, both types of strategy facilitated the learning of third graders. Based on these findings (among others), the authors conclude that "...the child's ability to form dynamic images relating 2 objects undergoes its most rapid development between the ages of 5 and 8" (p. 537).

However, it seems likely that imposed and induced imagery strategies are not mutually exclusive and discrete. Rohwer (1973) has distinguished among various "elaborative prompts" which suggests that there may be a continuum underlying the imposed-induced dimension as it relates to imagery development in young children. The purpose of the present study was to determine whether partially imposed imagery can be a facilitative prose-learning strategy at an age where fully induced imagery is not and, if so, at what age. The use of pictures and imagery in prose learning is currently a topic receiving much attention, and this study adds to the available information.

Method

Subjects

Kindergartners, second- and third-grade students, eighty from each grade, took part in this experiment. The kindergarten subjects (ranging in age from 5 years, 5 months to 6 years, 4 months) and second grade subjects (7 years, 4 months to 8 years, 7 months) came from a rural area in the midwest; the third grade subjects (8 years, 5 months to 9 years, 4 months) came from a semi-rural area also in the midwest. Each subject was randomly assigned to one of four conditions and tested individually in a small room.

Design and Materials

Two simple stories, each consisting of ten sentences, were composed.

Each sentence related to a designated object and the appropriate background information. Two sets of pictures for each story were constructed. Each picture in set #1 fully illustrated one sentence's content. The pictures of set #2 were identical to those of set #1 except that the designated objects were omitted from the illustration. The ten designated objects of each story constituted the answers for the ten questions following each story. The stories and the questions, as well as the subjects' answers, were recorded on tapes.

Procedure

Four experimental manipulations were explored: Pictures of Background and Objects (B + O), Pictures of Background (B), Imagery (I), and Control (C). All subjects listened to both stories. Subjects in the B + O condition were exposed to picture set #1 while listening to the stories. Subjects in the B condition were exposed to picture set #2 while they listened to the stories. Subjects in condition I received imagery instructions and the control group received no special instructions. The order in which the stories were presented was counterbalanced to make up eight groups to which subjects in each grade were randomly assigned. Following each story, the ten appropriate questions were asked.

Results and Discussion

Subjects' comprehension was measured by the total number of correct answers (out of 20) to the questions presented after the stories. Dunn's analysis procedure revealed that within kindergarten, only the B + O condition was significantly facilitative in comparison to the C group. No statistical differences were found among the B, I, or C groups. Within second grade, B + O was found not to differ significantly from the B manipulation. However, whereas the former was significantly higher than either condition I or C, the latter was not. Neither were I and C significantly different. Thus the notion that partial imagery induction is possible is somewhat supported, according to the pattern of statistical results that places condition B somewhere between condition B + O and conditions I and C in effectiveness. (It should be noted, however, that the lack of complete support for the parital-induction notion comes from the finding that B was not significantly greater than either I or C.) Within the third grade, the control group's performance was significantly lower in comparison to all other experimental manipulations. At the same time, no significant differences were found between any pair of means associated with conditions B + O, and I, thereby confirming the assertion that by third grade, students can and do benefit from a simple imagery strategy in oral prose learning.

On the basis of these results the practical significance of the theoretical notion regarding the imposed/induced continuum is suggested but not confirmed. It is suggested from the nonsignificant difference between the B + O and B conditions in the second grade, but is not confirmed because of the nonsignificant differences between the B and I or between the B and C conditions. It is possible that with a different methodology and learning materials, partially-imposed manipulations will produce a stronger effect.

This study also supports Lesgold, Levin, Shimron, and Guttmann's (in press) hypothesis that there is a developmental lag (of about two years) in the child's ability to benefit from imagery instructions in prose learning as compared with paired-associate learning. While seven-year-old subjects benefit from imagery instructions in the latter task (Levin, Davidson, Wolff, & Citron, 1973) in this study only nine-year-old subjects (third graders) were able to benefit from imagery instructions when presented with prose material. Theoretical and practical aspects of this finding are discussed in the paper.

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Footnote

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